IN THE CLAIMS:

1. (Currently Amended) A compound of formula:

I

or a pharmaceutically acceptable salt, hydrate, or solvate thereof, wherein

A represents a substituted or unsubstituted <u>benzene</u> ring selected from the group consisting of an aromatic ring, a 5- or 6-membered heteroaromatic ring, a 5- or 6-membered cycloalkane ring and a 5- or 6-membered heterocycloalkane ring;

II

B is <u>substituted or unsubstituted carbazolyl</u>; <u>selected from the group consisting</u> of cyclo(C_5 - C_8)alkyl, heterocyclo(C_5 - C_8)alkyl, cyclo(C_5 - C_8)alkenyl, heterocyclo(C_5 - C_8)alkenyl, aryl and heteroaryl;

L is (C_1-C_4) alkylene;

X and Y are each independently a divalent linkage selected from the group consisting of -O; -C(O); $-N(R^3)$ —; $-C(O)N(R^3)$ —; $-S(O)_k$ —; $-SO_2N(R^3)$ —; and $-(C_1-C_2)$ alkylene—, wherein C_1 or C_2 is optionally substituted with $-OR^3$, $-N(R^3)COR^4$, $-C(O)NR^3R^4$, $-N(R^3)CO_2R^4$, $-N(R^3)C(O)N(R^4)R^5$, or -(O);

 R^1 and R^2 are each independently selected from the group consisting of H, (C_1-C_4) alkyl, (C_2-C_8) alkenyl, (C_2-C_8) alkynyl, (C_1-C_8) heteroalkyl, aryl, aryl (C_1-C_4) alkyl, $-NR^6C(O)R^5$, $-C(O)R^5$ and $-NR^5C(O)NHR^6$ $-NR^5C(O)NR^6$; each R^b is selected from the group consisting of (C_1-C_4) alkyl, aryl, OR^7 , $C(O)R^7$ and $C(O)NR^7R^8$;

 R^3 and R^4 are independently selected from the group consisting of H, (C_1-C_8) alkyl, hetero (C_1-C_8) alkyl, aryl, aryl (C_1-C_4) alkyl, C(O)R', CO_2R' and C(O)NR'R'';

 R^5 , R^6 , R^7 and R^8 are independently selected from the group consisting of H, (C_1-C_8) alkyl, C(O)R''', CO_2R''' , aryl and $aryl(C_1-C_4)$ alkyl;

optionally, R⁷ and R⁸ may be combined with the nitrogen to which each is attached to form a 5-, 6- or 7-membered ring;

R', R" and R" are independently selected from the group consisting of H, (C_1-C_8) alkyl, aryl and $aryl(C_1-C_4)$ alkyl; and

the subscript p is an integer of from 0 to 4. 0 to 4; and
the subscript k is an integer of from 0 to 2;
with the proviso that X and Y are not both -O-, -N(R³)-, -S(O)_k- or
-SO₂N(R³)-.

- 2. (Original) The compound of Claim 1, wherein the subscript p is 0.
- 3. (Cancelled)
- 4. (Cancelled)
- 5. (Cancelled)
- 6. (Cancelled)
- 7. (Cancelled)
- 8. (Cancelled)
- 9. (Cancelled)
- 10. (Withdrawn; Currently Amended) The compound of Claim 1, wherein A represents benzene and B is substituted or unsubstituted 3-carbazolyl.
- 11. (Cancelled)
- 12. (Withdrawn; Currently Amended) The compound of Claim 1, having the formula (IV):

wherein:

each R^a is independently selected from the group consisting of halogen, halo(C_1 - C_4)alkyl, (C_1 - C_4)alkoxy, aryl(C_1 - C_4)alkyl, OC(O) R^{17} , NR¹⁷ R^{18} , SR¹⁷, cyano, nitro, CO_2R^{17} , CONR¹⁷ R^{18} , C(O) R^{17} , OC(O)NR¹⁷ R^{18} , NR¹⁸C(O)R¹⁷, NR¹⁸CO₂R¹⁷, NR¹⁹C(O)NR¹⁷ R^{18} , S(O)_kR¹⁷, S(O)_kNR¹⁷ R^{18} , N₃, (C₄-C₈)cycloalkyl, (C₅-

C₈)cycloalkenyl, aryl and heteroaryl, and the subscript k is an integer of from 1 to 2;

 R^{17} , R^{18} and R^{19} are independently selected from the group consisting of H, T02-009-1/US -3 - Amendment CAJD: 515052.1

 (C_1-C_8) alkyl, (C_1-C_8) heteroalkyl, aryl (C_1-C_4) alkyl and aryl; and the subscript m is an integer of from 0 to 4.

- 13. (Withdrawn; Currently Amended) The compound of Claim 12, wherein X or Y is $\underline{-(C_1-C_2)}$ alkylene—, wherein C_1 or C_2 is substituted with $\underline{-OH}$. (C_1-C_2)alkylene—OH.
- 14. (Withdrawn; Currently Amended) The compound of Claim 12, wherein Y is <u>—C1</u> <u>alkylene— substituted with —OH. CH—OH.</u>
- 15. (Withdrawn; Currently Amended) The compound of Claim 12, wherein X is <u>—(C₁-C₂)alkylene—, wherein C₁ or C₂ is substituted with —N(R³)COR⁴.

 (C₁-C₂)alkylene—N(R³)COR⁴.</u>
- 16. (Withdrawn; Currently Amended) The compound of Claim 12, wherein X is $\underline{-(C_1-C_2)}$ alkylene—, wherein C_1 or C_2 is substituted with $\underline{-N(R^3)COR^4}$ CH $\underline{-N(R^3)COR^4}$ and Y is $\underline{-C_1}$ alkylene— substituted with $\underline{-OH}$. CH $\underline{-OH}$.
- 17. (Cancelled)
- 18. (Cancelled)
- 19. (Cancelled)
- 20. (Currently Amended) The compound of Claim 1 having the formula (V):

$$(R^a)_m$$
 R^1
 R^2
 $[-7]_a$

wherein

each R^a is independently halogen, halo(C_1 - C_4)alkyl, (C_1 - C_4)alkoxy, aryl(C_1 - C_4)alkyl, OC(O) R^{17} , $NR^{17}R^{18}$, SR^{17} , cyano, nitro, CO_2R^{17} , $CONR^{17}R^{18}$, $C(O)R^{17}$, $OC(O)NR^{17}R^{18}$, $NR^{18}C(O)R^{17}$, $NR^{18}CO_2R^{17}$, $NR^{19}C(O)NR^{17}R^{18}$, $S(O)_kR^{17}$, $S(O)_kNR^{17}R^{18}$, N_3 , (C_4 - C_8)cycloalkyl, (C_5 - C_8)cycloalkenyl, aryl or heteroaryl, wherein R^{17} , R^{18} and R^{19} are independently selected from the group consisting of H, (C_1 - C_8)alkyl, (C_1 - C_8)heteroalkyl, aryl(C_1 - C_4)alkyl and aryl, and the subscript k is an integer of from 1 to 2; and

the subscript m is an integer of from 0 to 4.

- 21. (Original) The compound of Claim 20, wherein R¹ and R² are H.
- 22. (Original) The compound of Claim 1, having the formula:

wherein

 R^{11} is selected from the group consisting of H, (C_1-C_4) alkyl, (C_2-C_8) alkenyl, (C_2-C_8) alkynyl, (C_1-C_8) heteroalkyl, aryl, aryl (C_1-C_4) alkyl, heteroaryl, heteroaryl (C_1-C_4) alkyl, (C_3-C_8) cycloalkyl, (C_5-C_8) cycloalkenyl, (C_3-C_8) cycloalkyl-alkyl, (C_3-C_8) cycloheteroalkyl, (C_3-C_8) cycloheteroalk

each R^c is independently selected from the group consisting of $(C_1\text{-}C_8)$ alkyl, $(C_2\text{-}C_8)$ alkenyl, $(C_2\text{-}C_8)$ alkynyl, $(C_1\text{-}C_8)$ heteroalkyl, halo $(C_1\text{-}C_8)$ alkyl, halogen, CN, NO_2 , OR^{14} , SR^{14} , $NR^{14}R^{15}$, $(C_3\text{-}C_8)$ cycloalkyl, $(C_5\text{-}C_8)$ cycloalkenyl, $(C_3\text{-}C_8)$ cycloalkyl-alkyl, $(C_3\text{-}C_8)$ cycloheteroalkyl, $(C_3\text{-}C_8)$ cycloheteroalkyl-alkyl, $C(O)R^{14}$, CO_2R^{14} , $C(O)NR^{14}R^{15}$, aryl, aryl $(C_1\text{-}C_4)$ alkyl, heteroaryl, heteroaryl $(C_1\text{-}C_4)$ alkyl, $S(O)_kR^{14}$, $S(O)_kNR^{14}R^{15}$, $N(R^{15})S(O)_kR^{14}$, $OC(O)R^{14}$, OCO_2R^{14} ,

optionally, any two adjacent R^e groups may be combined to form a fused aryl ring or (C_5-C_8) cycloalkyl ring;

 R^{12} , R^{13} , R^{14} , R^{15} and R^{16} are independently selected from the group consisting of H, (C_1-C_8) alkyl, (C_1-C_8) heteroalkyl, $aryl(C_1-C_4)$ alkyl and aryl;

the subscript q is an integer of from 0 to 7; and the subscript k is an integer of from 1 to 2. 23. (Original) The compound of Claim 22, having the formula:

$$(\mathbb{R}^a)_{m} \xrightarrow{V_{-X}} X$$
 or
$$(\mathbb{R}^a)_{m} \xrightarrow{\mathbb{R}^1} \mathbb{R}^1$$
 or
$$(\mathbb{R}^a)_{m} \xrightarrow{\mathbb{R}^1} \mathbb{R}^2$$

wherein

each R^a is independently selected from the group consisting of halogen, halo(C_1 - C_4)alkyl, (C_1 - C_4)alkoxy, aryl(C_1 - C_4)alkyl, OC(O) R^{17} , NR¹⁷ R^{18} , SR¹⁷, cyano, nitro, CO_2R^{17} , $CONR^{17}R^{18}$, C(O) R^{17} , OC(O)NR¹⁷ R^{18} , NR¹⁸C(O)R¹⁷, NR¹⁸CO₂R¹⁷, NR¹⁹C(O)NR¹⁷ R^{18} , S(O)_kR¹⁷, S(O)_kNR¹⁷ R^{18} , N₃, (C₄-C₈)cycloalkyl, (C₅-C₈)cycloalkenyl, aryl and heteroaryl;

 R^{17} , R^{18} and R^{19} are independently selected from the group consisting of H, (C_1-C_8) alkyl, (C_1-C_8) heteroalkyl, aryl (C_1-C_4) alkyl and aryl;

the subscript m is an integer of from 0 to 4; and each subscript k is an integer of from 1 to 2.

- 24. (Previously Amended) The compound of any one of Claims 1, 20 and 23, wherein L is methylene.
- 25. (Previously Amended) The compound of Claim 23, having the formula (Xa):

Xa

wherein

L is methylene; and

X and Y are independently selected from $-(C_1-C_2)$ alkylene—, wherein C_1 or C_2 is optionally substituted with $-OR^3$, $-N(R^3)COR^4$, $-C(O)NR^3R^4$ or $-N(R^3)C(O)N(R^4)R^5$.

26. (Original) The compound of Claim 25, having a formula selected from the group consisting of:

, and

27. (Currently Amended) A compound of formula:

$$R^{20}$$
 R^{21}
 R^{22}
 R^{21}
 R^{21}

VII

or a pharmaceutically acceptable salt, hydrate, or solvate thereof, wherein

R²⁰ and R²³ independently represent H or OR³;

 R^{21} and R^{22} independently represent H, OR^3 , $N(R^3)COR^4$, $C(O)NR^3R^4$, $N(R^3)CO_2R^4$, $N(R^3)C(O)N(R^4)R^5$, $N(R^3)R^4$, $C(O)N(R^3)R^4$, $N(R^3)C(O)R^4$, $(CH_2)C(O)N(R^3)(R^4)$, $(CH_2)CO_2R^3$, or (C_1-C_4) alkyl;

 R^{11} represents H, (C_1-C_4) alkyl, (C_2-C_8) alkenyl, (C_2-C_8) alkynyl, (C_1-C_8) heteroalkyl, aryl, aryl (C_1-C_4) alkyl, heteroaryl, heteroaryl (C_1-C_4) alkyl, (C_3-C_8) cycloalkyl, (C_5-C_8) cycloalkenyl, (C_3-C_8) cycloalkyl-alkyl, (C_3-C_8) cycloheteroalkyl, (C_3-C_8) cycloheteroalkyl-alkyl, (C)R¹², (C)R¹², (C)R¹³, (C)R¹⁴, (C)R¹⁵, (C)R¹⁶, (C)R¹⁷, (C)R¹⁸, (C)R¹⁸, (C)R¹⁹, (C

 R^{12} and R^{13} independently represent H, (C_1-C_8) alkyl, (C_1-C_8) heteroalkyl, aryl (C_1-C_4) alkyl or aryl;

 R^3 and R^4 independently represent H, (C_1-C_8) alkyl, hetero (C_1-C_8) alkyl, aryl, aryl (C_1-C_4) alkyl, C(O)R', CO_2R' or C(O)NR'R''; and

R', R' and R'' are independently selected from the group consisting of H, (C_1-C_8) alkyl, aryl and aryl (C_1-C_4) alkyl.

- 28. (Original) The compound of Claim 27, wherein R²⁰ and R²³ each represent H, R²² represents OH, and R²¹ represents N(R³)C(O)R⁴.
- 29. (Original) The compound of Claim 27, wherein R^{20} represents OH, and R^{22} and R^{23} each represent H, and R^{21} represents C_2 alkyl.
- 30. (Original) The compound of Claim 27, wherein R²⁰, R²², and R²³ each represent H and R²¹ represents N(R³)C(O)R⁴.
- 31. (Original) The compound of Claim 27, wherein R^{20} , R^{22} , and R^{23} each represent H and R^{21} represents (CH₂)CO₂R³.

- 32. (Original) The compound of Claim 27, wherein R^{20} , R^{22} , and R^{23} each represent H and R^{21} represents $(CH_2)C(O)N(R^3)(R^4)$.
- 33. (Original) The compound of Claim 27, having a formula that is selected from the group consisting of:

- 34. (Cancelled)
- 35. (Cancelled)
- 36. (Cancelled)
- 37. (Cancelled)
- 38. (Cancelled)
- 39. (Cancelled)

- 40. (Cancelled)
- 41. (Cancelled)
- 42. (Previously Amended) The compound of Claim 25, wherein L is methylene.
- 43. (Withdrawn) A pharmaceutical composition comprising a pharmaceutically acceptable carrier or excipient and a compound of Claim 1.
- 44. (Previously Amended) A method of treating a <u>condition or disorder selected from the group consisting of obesity, type II diabetes, hypertension, hyperuricemia, stroke, dyslipidemia, coronary artery disease, hypercholesterolemia and atherosclerosis.

 metabolic disorder, comprising administering to a subject in need thereof a therapeutically effective amount of a compound of Claim 1.</u>
- 45. (Cancelled)
- 46. (Cancelled)
- 47. (Cancelled)
- 48. (Withdrawn) The method of any one of Claims 44, 45 and 46, wherein said compound is administered in combination with a second therapeutic agent.
- 49. (Withdrawn) The method of Claim 48, wherein said second therapeutic agent is selected from the group consisting of an anti-obesity agent, an anti-diabetic agent, a non-steroidal antiinflammatory agent, an opioid analgesic, an antineoplastic agent, a cholesterol lowering agent, an antithrombotic agent, an anticonvulsant, an antiphychotic agent, a cholinesterase inhibitor, an anticholinergic agent, a dopaminergic agent, interferon β, a multiple sclerosis therapeutic agent, an anti-anxiety agent, an antidepressant, a phophodiester V inhibitor, an α-2 adrenergic receptor antagonist and an MCHR1 antagonist.
- 50. (Withdrawn) A method of modifying feeding behavior, comprising administering to a subject an amount of a compound of Claim 1 effective to reduce or enhance food intake by the subject by at least 5%.

- 51. (Withdrawn) A method of reducing body mass, comprising administering to a subject an amount of a compound of Claim 1 effective to decrease the body mass of the subject by at least 5% of baseline.
- 52. (Withdrawn) The method of Claim 51, wherein the body mass of the subject is decreased by at least 10% of baseline.
- 53. (Withdrawn) A method of modulating MCHR2 in a cell, comprising contacting a cell with a compound of Claim 1.
- 54. (Withdrawn) A method for modulating MCHR2, comprising contacting a protein with a compound of Claim 1.
- 55. (Withdrawn) The method of Claim 54, wherein said compound is an MCHR2 antagonist.
- 56. (Withdrawn) A method for identifying a compound that modulates signal transduction, comprising
 - a)- contacting an isolated or recombinant MCHR2 polypeptide with a compound of Claim 1 under conditions suitable for MCHR2-mediated signal transduction;
 - b)- measuring intracellular Ca²⁺, cAMP or IP₃ in the absence and presence of said compound; and
 - c)- comparing intracellular Ca²⁺, cAMP or IP₃ levels in the absence and presence of said compound;

wherein an increase or a decrease in intracellular Ca²⁺, cAMP or IP₃ level in the presence of said compound indicates that said compound modulates signal transduction.

- 57. (Withdrawn) A method for identifying a compound that modulates signal transduction, comprising
 - a)- contacting an isolated or recombinant MCHR2 polypeptide with an MCHR2 ligand in the absence and presence of a compound of Claim 1 under conditions suitable for G-protein coupling to said polypeptide;

- b)- measuring G-protein activation in the absence and presence of said compound; and
- c)- comparing G-protein activation in the absence and presence of said compound;

wherein an increase or a decrease in G-protein activation in the presence of said compound indicates that said compound modulates signal transduction.

- 58. (Withdrawn) A method for identifying a compound that modulates MCHR2, comprising
 - a)- contacting an isolated or recombinant MCHR2 polypeptide with an MCHR2 ligand in the absence and presence of a compound of Claim 1 under conditions suitable for ligand binding to said polypeptide;
 - b)- measuring ligand binding to said polypeptide in the absence and presence of said compound; and
 - c)- comparing ligand binding to said polypeptide in the absence and presence of said compound;

wherein an increase or a decrease in ligand binding in the presence of said compound indicates that said compound modulates MCHR2.

- 59. (Withdrawn) A method for identifying a compound that modulates MCHR2, comprising
 - a)- contacting a cell comprising a target gene that is activated by an MCHR2 ligand with a compound of Claim 1 under conditions suitable for transcription or expression of said target gene;
 - b)- measuring the transcription or expression of said target gene in the absence and presence of said compound; and
 - c)- comparing the transcription or expression of said target gene in the absence and presence of said compound;

wherein an increase or a decrease in transcription or expression in the presence of said

compound indicates that said compound modulates MCHR2.

- 60. (Withdrawn) A method for identifying a compound that selectively modulates MCHR2, comprising
 - a)- contacting an isolated or recombinant MCHR polypeptide with a compound of Claim 1 under conditions suitable for ligand binding to said MCHR;
 - b)- measuring the binding affinities of said compound for said MCHR and for an MCHR2 polypeptide; and
 - c)- comparing the binding affinities of said compound for said MCHR and for said MCHR2 polypeptide;

wherein a binding affinity for said MCHR2 polypeptide of at least 10-fold greater than the binding affinity for said MCHR indicates that said MCHR2 compound selectively modulates MCHR2.

- 61. (Withdrawn) The method of any one of Claims 57, 58, 59, and 60 wherein said compound that modulates MCHR2 is an MCHR2 antagonist.
- 62. (Withdrawn) A compound identified according to the method of any one of Claims 57, 58, 59 and 60.
- 63. (Withdrawn) A method for identifying a compound that modulates MCHR2, comprising
 - a)- determining the binding mode of a compound of Claim 61 to MCHR2;
 - b)- modifying said compound to provide a test compound that is capable of said binding mode;
 - c)- contacting an isolated or recombinant MCHR2 polypeptide with an MCHR2 ligand in the absence and presence of said test compound under conditions suitable for ligand binding to said polypeptide;
 - d)- measuring ligand binding to said polypeptide in the absence and presence of said test compound; and

e)- comparing ligand binding to said polypeptide in the absence and presence of said test compound;

wherein an increase or a decrease in ligand binding in the presence of said test compound indicates that said test compound modulates MCHR2.

64. (New) A compound of formula:

or a pharmaceutically acceptable salt, hydrate, or solvate thereof, wherein

A represents a substituted or unsubstituted benzene ring;

B is substituted or unsubstituted carbazolyl, wherein any two adjacent substituent groups may optionally be combined to form a fused aryl ring or (C5-C8)cycloalkyl ring:

L is (C_1-C_4) alkylene;

X and Y are each independently $-(C_1-C_2)$ alkylene—, wherein C_1 or C_2 is optionally substituted with $-OR^3$, $-N(R^3)COR^4$, $-C(O)NR^3R^4$, $-N(R^3)CO_2R^4$, $-N(R^3)C(O)N(R^4)R^5$, or -(O);

 R^1 and R^2 are each independently selected from the group consisting of H, (C_1-C_4) alkyl, (C_2-C_8) alkenyl, (C_2-C_8) alkynyl, (C_1-C_8) heteroalkyl, aryl, aryl (C_1-C_4) alkyl, $-NR^6C(O)R^5$, $-C(O)R^5$ and $-NR^5C(O)NHR^6$;

each R^b is selected from the group consisting of (C_1-C_4) alkyl, aryl, OR^7 , $C(O)R^7$ and $C(O)NR^7R^8$;

 R^3 and R^4 are independently selected from the group consisting of H, (C_1-C_8) alkyl, hetero (C_1-C_8) alkyl, aryl, aryl (C_1-C_4) alkyl, C(O)R', CO_2R' and C(O)NR'R'';

 R^5 , R^6 , R^7 and R^8 are independently selected from the group consisting of H, (C_1-C_8) alkyl, C(O)R''', CO_2R''' , aryl and $aryl(C_1-C_4)$ alkyl;

optionally, R⁷ and R⁸ may be combined with the nitrogen to which each is attached to form a 5-, 6- or 7-membered ring;

R', R" and R" are independently selected from the group consisting of H, (C_1-C_8) alkyl, aryl and $aryl(C_1-C_4)$ alkyl; and

the subscript p is an integer of from 0 to 4.

65. (New) The compound of Claim 64, having the formula:

wherein

 R^{11} is selected from the group consisting of H, (C_1-C_4) alkyl, (C_2-C_8) alkenyl, (C_2-C_8) alkynyl, (C_1-C_8) heteroalkyl, aryl, aryl (C_1-C_4) alkyl, heteroaryl, heteroaryl (C_1-C_4) alkyl, (C_3-C_8) cycloalkyl, (C_5-C_8) cycloalkenyl, (C_3-C_8) cycloalkyl-alkyl, (C_3-C_8) cycloheteroalkyl, (C_3-C_8) cycloheteroalk

each R^c is independently selected from the group consisting of (C_1-C_8) alkyl, (C_2-C_8) alkenyl, (C_2-C_8) alkynyl, (C_1-C_8) heteroalkyl, halo (C_1-C_8) alkyl, halogen, CN, NO_2 , OR^{14} , SR^{14} , $NR^{14}R^{15}$, (C_3-C_8) cycloalkyl, (C_5-C_8) cycloalkenyl, (C_3-C_8) cycloalkyl-alkyl, (C_3-C_8) cycloheteroalkyl, (C_3-C_8) cycloheteroalkyl-alkyl, $C(O)R^{14}$, CO_2R^{14} , $C(O)NR^{14}R^{15}$, aryl, aryl (C_1-C_4) alkyl, heteroaryl, heteroaryl (C_1-C_4) alkyl, $S(O)_kR^{14}$, $S(O)_kNR^{14}R^{15}$, $N(R^{15})S(O)_kR^{14}$, $OC(O)R^{14}$, OCO_2R^{14} , $OC(O)NR^{14}R^{15}$, $N(R^{16})C(O)NR^{14}R^{15}$, $N(R^{15})C(O)R^{14}$ and $N(R^{15})CO_2R^{14}$;

optionally, any two adjacent R^c groups may be combined to form a fused aryl ring or $(C_5\text{-}C_8)$ cycloalkyl ring;

 R^{12} , R^{13} , R^{14} , R^{15} and R^{16} are independently selected from the group consisting of H, (C_1-C_8) alkyl, (C_1-C_8) heteroalkyl, aryl (C_1-C_4) alkyl and aryl;

the subscript q is an integer of from 0 to 7; and the subscript k is an integer of from 1 to 2.